

**Low Income Consumer Advisory Task Force**

**Supplement to Staff Presentation**

**02/27/2015**

Attached are the deemed savings for single family and multifamily energy efficiency measures. Measures across these two customer types are similar with the exception of HVAC, duct sealing and duct replacement. HVAC is based on the SEER replacement. Duct sealing and replacement for the multifamily measures take into account number of floors and/or apartments.



## MULTIFAMILY DEEMED SAVINGS BY MEASURE

### Recommended kWh Savings Calculations

Measure	Deemed
AC or Heat Pump Upgrades	See tables below
Solar Screens	KWh = 5.18338 X (Area), KWh = 2.08937 X (Area), KWh = 3.54039 X (Area), yearly kWh savings for gas heat, electric heat, and heat pump systems, weather zone 2
Reflective Roof	KWh = $(355/1.0 \times 10^5) \times (\text{Attic Area}) \times (101 \text{ days}) = 0.36 \times (\text{Attic Area})$ , Summer only
Attic\Roof Insulation	KWh <sub>Gas Heat</sub> = (1.54) X (Attic Area) KWh <sub>Strip Heat</sub> = (5.82) X (Attic Area) KWh <sub>Heat Pump</sub> = (2.10) X (Attic Area)
Pipe Wrap	KWh = (40) X (Number of Apartments)
LEDs	KWh = (24.1) X (Number of Bulbs)
Water Heaters Timers	KWh = $(0.399 \times 0.23) \times 365 \times (\text{Number of Apartments}) = 34 \times (\text{APTs})$
Duct Seal	KWh <sub>Top</sub> = (Percentage Replaced) X (Apts / Floors) X (Attic Deemed Savings) KWh <sub>Middle</sub> = (Percentage Replaced) X (Apts / Floors) X (Conditioned Deemed Savings) KWh <sub>Bottom</sub> = (Percentage Replaced) X (Apts / Floors) X (Slab Deemed Savings)
Water Saving Devices	KWh <sub>Showerhead</sub> = (Percentage replaced) X (Apts) X (186) KWh <sub>Low Flow Devices</sub> = (Percentage replaced) X (Apts) X (48)
Duct Replacement	KWh <sub>Top</sub> = (Percentage Replaced) X (Apts / Floors) X (Attic Deemed Savings) KWh <sub>Middle</sub> = (Percentage Replaced) X (Apts / Floors) X (Conditioned Deemed Savings) KWh <sub>Bottom</sub> = (Percentage Replaced) X (Apts / Floors) X (Slab Deemed Savings)
Low-E Windows	KWh <sub>Gas Heat</sub> = (SQFT Installed) X (3.46) KWh <sub>Electric Heat</sub> = (SQFT Installed) X (9.5) KWh <sub>Heat Pump</sub> = (SQFT Installed) X (5.27)
ENERGYSTAR® Ceiling fans	KWh = (Percentage Installed) X (Apts) X (141)
ENERGYSTAR® Dishwasher	KWh <sub>Gas</sub> = (Percentage Installed) X (Apts) X (33) KWh <sub>Electric</sub> = (Percentage Installed) X (Apts) X (74)

# Energy Savings (kWh) for 13 SEER New Construction Baseline - Zone 2

	SEER Range					
Size (tons)	14.0-14.4	14.5-14.9	15.0-15.9	16.0-16.9	17.0-17.9	18+
1.5	319	441	562	667	910	968
2.0	426	587	749	889	1,214	1,291
2.5	532	734	936	1,111	1,517	1,613
3.0	639	881	1,124	1,334	1,821	1,936
3.5	745	1,028	1,311	1,556	2,124	2,259
4.0	852	1,175	1,498	1,778	2,427	2,581
5.0	1,065	1,469	1,873	2,223	3,034	3,227

## SINGLE FAMILY DEEMED SAVINGS BY MEASURE

### Recommended kWh Savings Calculations

Measure	Deemed
<b>AC or Heat Pump Upgrades:</b>	See table below.
<b>1.) Package AC and Heat Pump systems</b>	
<b>2.) Split or Central AC and Heat Pump systems</b>	
<b>Solar Screens</b>	$KWh = 5.18338 \times (\text{Area}),$
<b>Reflective Roof</b>	$KWh = (355/1.0 \times 10^5) \times (\text{Attic Area}) \times (101 \text{ days}) = 0.36 \times (\text{Attic Area}),$ Summer only
<b>Attic\Roof Insulation</b>	$KWh_{\text{Gas Heat}} = (1.54) \times (\text{Attic Area})$
	$KWh_{\text{Strip Heat}} = (5.82) \times (\text{Attic Area})$
	$KWh_{\text{Heat Pump}} = (2.10) \times (\text{Attic Area})$
<b>Pipe Wrap</b>	$KWh = (40)$
<b>LEDs</b>	$KWh = (24.1) \times (\text{Number of Bulbs})$
<b>Water Heaters Timers</b>	$KWh = (0.399 \times 0.23) \times 365 = 34$
<b>Duct Seal</b>	$KWh_{\text{Top}} = (\text{Percentage Replaced}) \times (\text{Attic Deemed Savings})$
	$KWh_{\text{Middle}} = (\text{Percentage Replaced}) \times (\text{Conditioned Deemed Savings})$
	$KWh_{\text{Bottom}} = (\text{Percentage Replaced}) \times (\text{Slab Deemed Savings})$
<b>Water Saving Devices</b>	$KWh_{\text{Showerhead}} = (\text{Percentage replaced}) \times (\text{Fixtures}) \times (186)$
	$KWh_{\text{Low Flow Devices}} = (\text{Percentage replaced}) \times (\text{Fixtures}) \times (48)$
<b>Duct Replacement</b>	$KWh_{\text{Top}} = (\text{Percentage Replaced}) \times (\text{Attic Deemed Savings})$
	$KWh_{\text{Middle}} = (\text{Percentage Replaced}) \times (\text{Conditioned Deemed Savings})$
	$KWh_{\text{Bottom}} = (\text{Percentage Replaced}) \times (\text{Slab Deemed Savings})$
<b>Low-E Windows</b>	$KWh_{\text{Gas Heat}} = (\text{SQFT Installed}) \times (3.46)$
	$KWh_{\text{Electric Heat}} = (\text{SQFT Installed}) \times (9.5)$
	$KWh_{\text{Heat Pump}} = (\text{SQFT Installed}) \times (5.27)$
<b>ENERGYSTAR® Ceiling fans</b>	$KWh = (\text{Percentage Installed}) \times (141)$
<b>ENERGYSTAR® Dishwasher</b>	$KWh_{\text{Gas}} = (\text{Percentage Installed}) \times (33)$
	$KWh_{\text{Electric}} = (\text{Percentage Installed}) \times (74)$
<b>Variable Speed Pool Pumps</b>	$KWh = 365 \times ((6.3 \text{ hours}) \times (2.108) - (19 \text{ hours}) \times (1.054)) = 2462 \times (\text{Pool Pump})$
<b>Window AC Units</b>	$KWh = (139) \times (\text{AC Unit})$
<b>Mini Split Heat Pump</b>	$KWh = (1590 + 186) \times (\text{Unit})$

# Energy Savings (kWh) for 12.44 SEER Retrofit Baseline - Zone 2

	SEER Range					
Size (tons)	14.0-14.4	14.5-14.9	15.0-15.9	16.0-16.9	17.0-17.9	18+
1.5	472	594	715	820	1,063	1,121
2.0	630	791	953	1,093	1,418	1,495
2.5	787	989	1,191	1,366	1,772	1,868
3.0	945	1,187	1,430	1,640	2,126	2,242
3.5	1,102	1,385	1,668	1,913	2,481	2,616
4.0	1,259	1,583	1,906	2,186	2,835	2,989
5.0	1,574	1,978	2,383	2,733	3,544	3,736